ABSTRACT

CORRELATION OF MALONDIALDEHID (MDA) LEVEL ALTERATION AS LIVER PREDICTOR AND ENZYME AS PARAMETER OF ADVERSE DRUG EVENTS OF DRUG INDUCED LIVER INJURY (DILI) IN EPILEPTIC PATIENTS WITH VALPROATE MONO THERAPY

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Background: Epilepsy is brain abnormality that characterized with tendency to cause epileptic seizure continually, neurobiology, cognitive, psychology, and social consequences. Antiepileptic drug (AED) is main therapy for epilepsy management. The aim of epilepsy therapy with AED is to prevent the next seizure attack with minimal adverse effects. Valproate acid is antiepileptic drug that has broad spectrum and can be used to all types of epilepsy, especially in idiopathic general epilepsy, despite of its successful results, it has been reported that one of its adverse effect is to cause liver damage, which characterized with elevation of liver enzyme.

Objective: The aim of this study is to analyze the correlation of MDA level elevation as predictor and abnormality of liver enzyme value. Alanine Aminotransferase (ALT) and Alkaline Phosphatase (ALP) are as parameters of adverse effect events of Drugs Induced Liver Injury (DILI) in epileptic patients with monotherapy of valproate.

Methods: The study was observational prospective. The study has been approved by the Ethics Committee of Dr Soetomo Teaching Hospital. There are 44 subjects study who fulfilled inclusion criteria. Effectiveness of VPA use data was decrease of seizure intensity and duration that attended from patient medical record. MDA level measurement used Competitive-ELISA (Enzyme-linked Immunosorbent Assay) and ALP & AST level measurement used Spectrofotometry in laboratory at Universitas Airlangga Surabaya.

Result: From all of three parameters that tested, correlation of MDA to ALP, ALT and ALT/ALP ratio, it can be concluded statistically that there is no correlation between elevation of MDA level to ALP with p value ($p>0,05$). However there is negative correlation between elevation of MDA level to ALT/ALP ratio with p value ($p<0,05$). This study also resulted that duration of VPA monotherapy affects to seizure intensity and duration before and after therapy with ($p=0.000$) and ($p=0.000$) consecutively.

Conclusion: According to the study results, it can be concluded that no correlation between elevation of MDA level is predictor of liver enzymes of ALP and ALT as parameters of adverse drug event of Drug Induced Liver Injury (DILI) to epileptic patients with VPA mono therapy.

Key Words: *Valproic Acid, Epilepsy, Malondialdehyde, Drug Induced Liver Injury*